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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,484	09/16/2003	Hideo Okada	1344.1124	9627

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EXAMINER

JUBA JR, JOHN

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/662,484	Applicant(s) OKADA ET AL.	
	Examiner John Juba, Jr.	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11 - 20 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/16/03 & 5/13/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claims 1 – 20 are objected to because of the following informalities. Appropriate correction is required:

Claims 1 – 10 are objected to as being narrative and as lacking a positive recitation of active method steps.

Claim 5 lacks antecedent basis for “said first fixture”.

In claim 5, the cooperation of elements would be more clear if lines 2 – 3 were amended to read “wherein said first fixture is coupled with a second fixture to constitute a mirror module, the second fixture being mountable on a movable stage ~~to constitute a mirror module~~”.

In claim 11, line 2, “comprising;” should read “comprising:”. Claims 12 – 20 are objected to for containing the same informality through their dependency from claim 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Perkins (U.S. Patent number 4,637,695). Referring for example to Figure 2 and the associated text, Perkins discloses an optical apparatus having an optical system constructed using a mirror (*i.e.*, including a mirror), comprising a mirror part having a base plate (9) formed with a mirror on one face thereof, and a “boss” (shaft 1) provided on the other face of the base plate opposite to the first face; and a first fixture (2)(20) fixing only said boss, so that the mirror part excluding said boss is not in contact with other members. The method of using the apparatus is inherently a method capable of “reducing” stress distortion on the mirror surface, compared, for example to the case where the mirror plate itself is supported within a bearing structure.

With regard to claims 2 and 12, the first fixture (2)(20) includes a receiving plate (20) with an opening capable of inserting said boss (1) therein and [the fixture being] provided with a screw hole in bearing (2) perpendicular to a side wall of said opening.

Claims 1, 5 - 8, 11, and 15 – 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Humpal (U.S. Patent number 4,705,369). Referring for example to Figure 2 and the associated text, Humpal discloses an optical apparatus having an optical system constructed using a mirror (*i.e.*, including a mirror), comprising a mirror part having a base plate (28) formed with a mirror on one face thereof, and a “boss” (of trapezoidal cross-section) provided on the other face of the base plate opposite to the

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first face; and a first fixture (48) fixing only said boss, so that the mirror part excluding said boss is not in contact with other members. The method of using the apparatus is inherently a method capable of "reducing" stress distortion on the mirror surface, compared, for example to some other mounting arrangement.

With regard to claims 5 and 15, the first fixture is coupled to a second fixture (38)(40)(42)(44)(46)(60), etc., to form a pivotable mirror module, the second fixture being mounted to a moveable (rotatable) stage (32)(58).

With regard to claims 6 and 16, the second fixture includes a receiving plate (38) formed with an angle adjusting boss (46), the movable stage is provided with a member (58) formed with an opening capable of inserting therein said angle adjusting boss, and the mirror module is installed on said moveable stage by inserting said angle adjusting boss of said receiving plate in said opening of said member.

With regard to claims 7, 8, 17, and 18, yaw cylinder (30) may be regarded as a travel shaft of the movable stage. Rotation of the mirror describes a circumference as recited.

With regard to claims 19 and 20, the mirror of Humpal is of cylindrical form, and thus "aspherical". The recitation of the mirror as being "used in a variable wavelength dispersion compensator" does not convey any clear structural limitations to the apparatus. That is, the claim appears to be drawn to the subcombination, where the positively recited structure is capable of being used (albeit with different results) in the manner recited.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins (U.S. Patent number 4,637,695), in view of Official notice. As set forth above for claims 1 and 2, Perkins discloses the invention substantially as claimed. However, Perkins does not disclose the opening opposite to the screw hole as comprising a V-groove structure (claims 3 and 13) and does not disclose a cushion on the screw type (claims 4 and 14).

The examiner takes Official notice of the fact that it was well known to form a V-groove structure in a side wall portion of a bearing supporting a cylindrical shaft. The V-groove structure was known to provide two points of contact on the cylindrical shaft and thus as reducing the friction on the shaft. Further, the examiner takes Official notice of the fact that it was well known to provide a cushion on the tip of a set screw, in the interest of protecting the shaft from damage.

It would have been obvious to one of ordinary skill to provide a V-groove structure in a side wall portion of the hole in the bearing of Perkins, in the interest of reducing the friction on the cylindrical shaft as was well known. Perkins suggests a V-groove supporting structure, just not in combination with a set screw. Thus, it appears that the combination with a set screw would have permitted the shaft to be adjusted with

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minimal friction, and then secured in place with the set screw, whereby the fixture could safely be moved without the shaft falling out of place due to a relative reorientation of the force of gravity. Further it would have been obvious to provide a cushion on the set screw tip, in the interest of preventing damage to the shaft, as was well-known. The undamaged shaft would have been easier to adjust within the bearing.

Allowable Subject Matter

Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

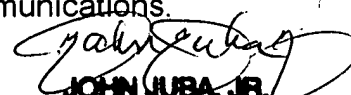
The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or fairly suggest the combination particularly wherein the method includes the step of using the recited fixed mirror in a dispersion compensator, as recited in claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for *all* communications.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

November 15, 2004